UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8, MONTANA OFFICE
FEDERAL BUILDING, 10 West 15th St, Suite 3200
HELENA, MONTANA 59626

Ref: 8MO

November 19, 2012

Beaverhead-Deerlodge National Forest
Att: Ms. Charlene F. Bucha Gentry, District Ranger,
Pintler Ranger District
88 Business Loop
Philipsburg, Montana 59858

Re: CEQ 20120330; EPA comments on Flint Foothills Vegetation Management Project DEIS

Dear Ms. Bucha Gentry:

The Environmental Protection Agency (EPA) Region VIII Montana Office has reviewed the Draft Environmental Impact Statement (DEIS) for the Beaverhead-Deerlodge National Forest's Flint Foothills Vegetation Management Project in accordance with EPA's responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA), 42 U.S.C. Section 4321 *et.seq.*, and Section 309 of the Clean Air Act, 42 U.S.C., Section 7609. Section 309 of the Clean Air Act directs EPA to review and comment in writing on the environmental impacts of any major Federal agency action. EPA's comments include a rating of both the environmental impact of the proposed action and the adequacy of the NEPA document.

The EPA understands the need to address the tree mortality, forest health, fuels and fire risk, and timber salvage issues in the Flint Foothills project area of the Beaverhead-Deerlodge National Forest (BDNF). Our concerns regarding the proposed project are primarily associated with construction of new roads and the adequacy of funding for the BDNF to maintain existing roads and proposed new roads. The DEIS states that "sediment delivery to streams from roads poses the greatest risk to water quality." Sediment from roads, particularly during road construction, and from poorly maintained roads with inadequate road drainage and many stream crossings, is of concern in regard to road effects. Roads and motorized uses can also adversely affect wildlife habitat, connectivity and security, can adversely impact air quality, and promote spread of weeds and cause other adverse ecological effects.

Alternative 2 proposes construction of approximately 1.3 miles of new permanent road and 7.2 miles of temporary road, reconstruction of 41.7 miles of existing road and maintenance of 58.9 miles of road used for log hauling. An amount of 1.1 miles of open and closed unauthorized routes would be added to the Forest transportation system. Alternative 3 proposes no new road construction and includes 12 fewer miles of log haul routes, but also involves 141 fewer acres of clearcut salvage harvest and 483 fewer acres of commercial thinning (avoiding thinning in 121 acres of old growth).

We tend to support Alternative 3 over Alternative 2 due to its avoidance of new road construction. Although we also recognize the need to conduct forest management activities to restore vegetative conditions, improve forest resilience to fire, insects and disease, and salvage some dead and dying trees to provide timber products for the local economy; and we recognize the need for road access to conduct vegetation management activities.

We consider it appropriate to evaluate the many environmental and resource management trade-offs (i.e., trade-offs in impacts among vegetation treatments, restoration of vegetative conditions, fire risk and fuels, forest health, wildlife, water quality and fisheries, air quality, weed spread, old growth, and other resource impacts), in an effort to optimize the trade-offs while addressing project purpose and need, the significant issues, and minimizing adverse environmental impacts. We acknowledge that some minimal amount of new temporary road may be needed to carry out particularly important vegetative restoration actions, although it is important that all road be properly maintained.

The BDNF, therefore, may want to consider development of a modified preferred alternative in an effort to optimize the environmental and resource management trade-offs. We have identified desirable features we consider worthy of including in a modified preferred alternative in our more detailed comments (enclosed). We recommend avoiding new road construction in the Dolus inventoried roadless area. Additional alternatives evaluation in the FEIS may also better explain to the public the trade-offs involved in making land management decisions, and may also lead to improved public acceptance of decisions. We note of course that the Forest Service would need to evaluate and analyze the impacts of any new modified alternative that is developed, and display those impacts in the FEIS.

The DEIS identifies several road sediment source problem areas within the project area (e.g., Roads 636, 78472, 1557). It appears, therefore, that all road sediment and erosion control problem areas have not been properly maintained over time with implementation of appropriate BMPs. We recommend that the FEIS include additional discussion of the adequacy of funding to implement and maintain needed road BMPs when they are in need of repair. If existing roads cannot be properly maintained, it adds to concerns regarding maintenance of any new roads that may be proposed for construction.

The DEIS indicates that approximately 4.4 miles of existing open and closed unauthorized routes would be reconstructed with the proposed action, and following implementation, these routes would be decommissioned by various methods. We fully support decommissioning of roads, since as noted above sediment delivery to streams from roads poses the greatest risk to water quality, and reductions in road density, especially road stream crossing density, has often been correlated with improved aquatic health. We also note that lower road densities are often associated with improved wildlife habitat, connectivity and security, and there is often a relationship between higher road density and increased forest use and increased human caused fire occurrences. Reduction in road density, therefore, may also reduce risks of human caused fires, which could be important in an area with high fuels/fire risk and/or wildland/urban interface issues.

Are there any opportunities to decommission additional roads in the Flint Foothills project area, particularly roads near streams with problem areas that are difficult to maintain? We encourage closure and/or decommissioning of roads near streams with many stream crossings, since removal of these roads are more likely to have water quality benefits than closure and decommissioning of roads on upper slopes and ridges.

We also recommend that the potential project effects on Douglas Creek be better addressed in the FEIS disclosures regarding watershed and water quality impacts. Silvicultural activities are listed by the State of Montana to be among the probable sources of water quality impairment in Douglas Creek. The DEIS indicates that past timber harvests in the Douglas Creek drainage involved the highest percentage of watershed harvested of any project drainage (i.e., 8.2 percent of acreage harvested), and 2.0% of the Douglas Creek watershed is proposed for new additional harvests in the proposed Flint Foothills project so that the total cumulative harvest in this watershed would be 10.2%. This would be the highest cumulative harvest amount in any of the Flint Foothills project drainages, and since Douglas Creek is water quality impaired, with probable causes of impairment listed as nitrogen, nitrate and physical substrate habitat alterations, we recommend additional analysis and disclosure regarding potential water quality and stream channel effects.

We also recommend that the BDNF consult with Montana DEQ TMDL program staff to assure that the MDEQ considers the proposed Flint Foothills Vegetation Management actions to be consistent with development and implementation of applicable TMDLs and water quality improvement and restoration of support for beneficial uses in 303(d) listed streams (contact MDEQ staff such as Mr. Dean Yashan at 406-444-5317, and/or Mr. Robert Ray at 406-444-5319). In addition we encourage review of the MDEQ's pamphlet, ***"Understanding the Montana TMDL Process."***
http://deq.mt.gov/wqinfo/TMDL/default.mcpx .

The EPA's further discussion and more detailed questions, comments, and/or concerns regarding the analysis, documentation, or potential environmental impacts of the Flint Foothills Vegetation Management Project DEIS are included in the enclosure with this letter. Based on the procedures EPA uses to evaluate the adequacy of the information and the potential environmental impacts of the proposed action and alternatives in an EIS, the DEIS has been rated as Category EC-2 (Environmental Concerns - Insufficient Information) due to potential for some adverse effects to water quality and road sediment effects from proposed management activities should Alternative 2 be selected. A copy of EPA's rating criteria is attached. We recommend additional analysis and information to fully assess and mitigate all potential impacts of the management actions.

The EPA appreciates the opportunity to review and comment on the DEIS. If we may provide further explanation of our comments please contact Mr. Steve Potts of my staff in Helena at 406-457-5022 or in Missoula at 406-329-3313 or via e-mail at potts.stephen@epa.gov.

We thank you for your consideration.

Sincerely,

Julie A. DalSoglio

Julie A. DalSoglio
Director
Montana Office

Enclosures
cc: Suzanne Bohan/Judy Roos, EPA 8EPR-N, Denver
Dean Yashan/Robert Ray, MDEQ, Helena

EPA COMMENTS ON THE FLINT FOOTHILLS VEGETATION MANAGEMENT PROJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

Brief Project Overview:

The Beaverhead Deerlodge National Forest (BDNF), Pintler Ranger District, prepared the Flint Foothills Vegetation Management DEIS to address vegetation conditions resulting from insect and disease infestations. The Flint Foothills project area encompasses 44,522 acres located on the north end of the Flint Range in the Clark Fork Flint Landscape about 6 miles southeast of Drummond, Montana. Eighty-three percent of the area (37,010 acres) is managed by the BDNF; the remainder is private in-holdings (7,512 acres). The project purpose and need is to contribute to achievement of Forest Plan goals and objectives to produce timber for economic benefits, maintain long term sustained timber yield, and improve forest conditions by reducing forest density in the large size classes of dry forest communities and some lodgepole pine communities. No action (Alternative 1) and two action alternatives (Alternatives 2 and 3) were evaluated. The DEIS did not identify a Preferred Alternative.

Alternative 2 is the proposed action which involves 1,163 acres of clearcut regeneration salvage of dead and dying lodgepole pine; 1,149 acres of commercial thinning of ponderosa pine and Douglas-fir (including 121 acres in old growth); 353 acres of seed tree with reserves harvest; 1,990 acres of prescribed burning; and 1,048 acres of pre-commercial thinning of saplings. Collectively, commercial vegetation treatments would provide 16,042 MBF (32,083 CCF) in sawtimber; and 4,010 MBF (8,021 CCF) in non-saw timber. Approximately 1.3 miles of new permanent road and 7.2 miles of temporary road would be constructed, and 1.1 miles of open and closed unauthorized routes would be added to the Forest transportation system. Approximately 58.9 miles of road would be maintained, and 41.7 miles would be reconstructed for log hauling.

Alternative 3 addresses concerns about new road construction, and logging within old-growth stands, no new temporary roads would be constructed since eight units needing new temporary road construction are eliminated (36S, 47S, 72S, 48C, 56C, 57C, 68C, and 71C). Six units utilize existing open and closed unauthorized routes to and within the unit to accommodate logging (52S, 73S, 12C, 20C, 23C, and 80C). Instead, longer skidding distances (averaging 1,425 feet) would be utilized to log the unit with ground-based systems. Four units are reduced in size (23C, 25C, 55C, and 6C) by a total of 121 acres to eliminate commercial understory thinning of old-growth stands. Alternative 3 involves 1,022 acres of clearcut regeneration salvage of dead and dying lodgepole pine; and 666 acres of commercial thinning of ponderosa pine and Douglas-fir (no thinning in old growth); and would include the same treatment acres as Alternative 2 for seed tree harvest, prescribed burning and pre-commercial thinning treatments. Collectively, the commercial vegetation treatments would provide 12,686 MBF (25,372 CCF) in sawtimber; and 3,172 MBF (6,343 CCF) in non-saw timber. Approximately 47.1 miles of road would be maintained, and 38.3 miles would be reconstructed, and 1.1 miles of open and closed unauthorized routes would be added to the Forest transportation system.

Comments:

1. We appreciate the inclusion of clear narrative discussions describing alternatives in the DEIS, including the tables and maps summarizing the activities and features included in the two action alternatives; discussion of project design features and mitigation measures; discussion of alternatives considered but eliminated from detailed study; Table 20 comparing alternatives; and the many informative appendices included in Volume 2. The DEIS narrative, tables, maps, and appendices facilitate improved project understanding, help define issues, and assist in evaluation of alternatives providing a clearer basis of choice among options for the decisionmaker and the public in accordance with the goals of NEPA.

Water Resources/Hydrology/Fisheries

2. Thank you for including project area watershed maps (Figures 39 and 40), which facilitate understanding and review of the watershed analyses in the DEIS. We also appreciate the DEIS disclosures regarding streams in the project area listed as water quality impaired by the Montana Dept. of Environmental Quality (MDEQ) under Section 303(d) of the Clean Water Act (i.e., Barnes Creek, Dunkleberg Creek, North Fork Douglas and Douglas Creeks and Gold Creek). The DEIS indicates that Barnes Creek is the only water quality impaired stream in the project area that is listed with sediment as a pollutant cause of impairment. We note that MDEQ's 303(d) listing website (http://cwaic.mt.gov/) indicates that the probable sources of Barnes Creek water quality impairment are irrigated crop production and grazing. We also note that water quality impairment in Douglas Creek identifies silvicultural activities among the potential sources of impairment, with probable causes listed as nitrogen and nitrate and physical substrate habitat alterations (related to sediment) (waterbody MT76E003_020, 7.1 miles partial aquatic life use impairment from the confluence of its Middle and South Forks to Flint Creek).

   We recommend that the potential effects on Douglas Creek's nitrogen and nitrate levels and physical substrate habitat due to proposed Flint Foothills project silvicutural activities be more fully addressed in the watershed and water quality impact analyses. The DEIS indicates that past timber harvests in the Douglas Creek drainage involved the highest percentage of watershed harvested in any project drainage (i.e., 8.2 percent of acreage harvested, page 278). Table 81 (page 292) indicates that 2.0% of the Douglas Creek watershed would be harvested in the currently proposed Flint Foothills project so that the total cumulative harvest in this watershed would be 10.2%, which is the highest cumulative harvest amount in any of the project drainages. Although the DEIS predicts little total water yield increase from timber harvests due to beetle killed trees (page 279), and states that previously harvested areas have generally recovered hydrologically from the prior harvests, which were conducted in the 1980's and 1990's (page 293). We are still concerned about potential effects on Douglas Creek channel stability and substrate habitat. Will the Douglas Creek channel remain stable and stream substrate be minimally affected by proposed additional harvests despite the cumulative watershed harvest of 10.2% of the watershed acreage (i.e., past and present harvest)?

3. We are pleased that the DEIS states that target values for road and upland sediment sources for Barnes Creek that are specified in the Draft Flint Creek Planning Area Sediment and Metals Total Maximum Daily Loads (TMDLs) and Framework Water Quality Improvement Plan would not be exceeded, and no additional degradation to 303(d) listed streams would be expected with the implementation of soil and water quality BMPs, implementation of the required RCAs and improvements to road drainage, and any changes to stream water quality would probably not be measurable relative to natural variation (pages 296, 303).

   We recommend that the BDNF consult with Montana DEQ TMDL program staff to assure that the MDEQ considers the proposed Flint Foothills Vegetation Management actions to be consistent with development and implementation of applicable TMDLs and water quality improvement and restoration of support for beneficial uses in 303(d) listed streams (contact MDEQ staff such as Mr. Dean Yashan at 406-444-5317, and/or Mr. Robert Ray at 406-444-5319). We also encourage review of the MDEQ's pamphlet, ***"Understanding the Montana TMDL Process."*** http://deq.mt.gov/wqinfo/TMDL/default.mcpx .

4. We appreciate the DEIS analysis and discussion of water yield and channel stability effects in regard to the project watersheds (pages 277-279, 291-293). While our earlier comment #2 mentioned a concern regarding potential water yield/channel effects regarding the past and proposed cumulative timber harvests on Douglas Creek, we note that the DEIS indicates that the highest proposed timber harvest (4.1 percent) would be in the Gold Creek watershed, followed by 3.8 percent harvest of the watershed of Lower Flint Creek-Gird Creek.

   Over 500 acres of salvage by clearcut is proposed in the Gold Creek watershed (page 293), but the DEIS indicates that the overall percent of trees to be harvested, combined with past harvest is well under a 25 percent threshold (for channel stability) for the watershed. The DEIS states that as trees grow back in harvested areas, evapotranspiration would increase, and more incoming precipitation would be taken up by vegetation or evaporated, and less water would be available to re-supply shallow and deep groundwater and available for runoff. It also states that most of the proposed harvest in the other project watersheds would be treated by commercial thinning, with large, dominant trees left after treatment, and thus, measurable increases in water quantity would not be expected in commercially thinned areas.

   We are pleased that the DEIS estimates that no notable changes in flow volume, or alteration to timing of peak flows would be expected from proposed vegetative treatments and that stream channel effects are not expected from proposed harvest and burning activities.

5. Roads and motorized uses often affect watershed conditions, water quality and fisheries in streams on National Forests. Sediment from roads, particularly during road construction, and from poorly maintained roads with inadequate road drainage and many stream crossings, is often of concern in regard to road effects. Roads are often the major anthropogenic sediment source adversely affecting hydrology, water quality, and fisheries.

We appreciate the DEIS discussion of the effects of roads on watersheds and water quality, and disclosures of road conditions and estimated road sediment yield in the DEIS (pages 275 to 277). We agree with the statement in the DEIS that, "sediment delivery to streams from roads poses the greatest risk to water quality" (page 295). We also note that roads and motorized uses can adversely affect wildlife habitat, connectivity and security; can adversely impact air quality; and promote spread of weeds and cause other adverse ecological effects. We generally encourage minimization of new road construction, especially roads near streams and that require new stream crossings, and roads on steep slopes or erosive soils or other environmentally sensitive areas.

Accordingly we tend to support Alternative 3 involving no new road construction over Alternative 2 that would involve construction of 1.3 miles of new permanent road and 7.2 miles of new temporary roads. Alternative 3 would also involve 12 fewer miles of log haul routes (page 297). Although it is stated that only one new stream crossing would be constructed under Alternative 2 (on a temporary haul route (T3) in Lower Flint Creek-Gird Creek, page 291), and both action alternatives are stated as being consistent with Barnes Creek sediment targets in the Draft Flint Creek Planning Area Sediment and Metals TMDLs and Framework Water Quality Improvement Plan. We also recognize the need to conduct forest management activities to restore vegetative conditions, improve forest resilience to fire, insects and disease, and salvage dead and dying trees to provide timber products for the local economy; and we recognize that road access is often needed for conduct of vegetation management activities.

Land management decisions involve environmental and resource management trade-offs (i.e., trade-offs in impacts among vegetation treatments, restoration of vegetative conditions, fire risk and fuels, forest health, wildlife, water quality and fisheries, air quality, weed spread, old growth, and other resource impacts). We consider it appropriate to further evaluate the many environmental and resource management trade-offs, and make an effort to optimize the trade-offs while minimizing adverse environmental impacts while addressing project purpose and need and the significant issues. We acknowledge that some minimal amount of new temporary road may be needed to carry out particularly important vegetative restoration actions. The BDNF, therefore, may want to consider development of a modified preferred alternative in an effort to optimize the environmental and resource management trade-offs. Desirable features we consider worthy of including in a modified preferred alternative are as follows:

- minimize new road construction and reconstruction, especially long-term or permanent new roads (especially in the Dolus inventoried roadless area), and locate necessary new roads on uplands away from streams with minimal new stream crossings, where they have minimal aquatic impacts, and avoid road construction on steep and erosive soils (particularly in the water quality impaired Barnes Creek drainage);

- maximize improvements to road BMPs, road drainage, and sediment/erosion control, address road failures, replace undersized culverts and culverts that block fish passage (except where such blockage is desired to protect native fish populations);

▶ maximizing decommissioning of roads and removal of road stream crossings to reduce existing road densities, while allowing for necessary management and reasonable public access, since improved watershed conditions, fisheries, and wildlife habitat and security are associated with reduced road densities;

▶ maximize fish and watershed improvement (i.e., rehabilitation of mining or grazing impacted streams, reducing stream encroachments, stabilizing eroding streambanks, improving aquatic habitat, revegetating disturbed areas);

▶ plan, design and implement vegetative treatments to minimize erosion and sediment transport and excessive water yield;

▶ reduce fuel loadings in high fire risk areas, particularly urban interface areas, while improving wildlife habitat, connectivity and security, retaining large healthy trees of desirable species and/or species in decline (Ponderosa pine, whitebark pine, aspen), and promoting more natural and sustainable forest structure, and protecting other resource values (e.g., soil productivity, old growth, control of noxious weeds, options for future wilderness consideration);

▶ provide a Forest road and trail system that allows adequate access for management, avoids erosion & transport of sediment to streams, spread of noxious weeds, degradation of habitat in wetlands and other environmentally sensitive areas; and provides opportunities for public recreation and adequately balances motorized and non-motorized recreation opportunities.

6. We are pleased that the Road WEPP model (Water Erosion Prediction Project) was used to model sediment delivery from roads and the Disturbed WEPP model was used to model sediment production for harvest units. The Road WEPP model appears to include assumptions that appropriate road BMPs are implemented and maintained. However, funding to maintain roads and correct road drainage and erosion problems is often limited. We are concerned about the adequacy of funding available to adequately implement road BMPS and maintain roads over the long term to avoid sediment delivery to surface waters, stream sedimentation and degradation of stream bottom substrates and other aquatic habitats.

   DEIS Table 77 (pages 276, 277), Table 80 (pages 288, 289) and Table 82 (pages 298, 299) identify road conditions and road sediment source problem areas within the project area (roads 636, 78472, 1557). It does not appear that road sediment and erosion control problem areas have been properly maintained over time with implementation of appropriate BMPs. Roads should be properly maintained over time (e.g., installing drainage dips or surface water deflectors, armoring drainage structures, grading and replacement of aggregate to reinforce wet surface areas, ditch construction and cleaning, removing and replacing undersized culverts, etc.).

   Are adequate road maintenance funds available on the BDNF to address the road sediment source problems identified in the tables listed above as well as any new roads that would be constructed in Alternative 2? The FEIS should include additional discussion of the adequacy of funding to

implement and maintain needed road BMPs when they are in need of repair. If existing roads cannot be properly maintained, it adds to concerns regarding maintenance of any new roads that may be proposed for construction.

7. It is stated (page 24) that approximately 4.4 miles of existing open and closed unauthorized routes would be reconstructed with the proposed action, and following implementation, these routes would be decommissioned by various methods. Table 6 (pages 16, 17) shows unauthorized routes that would be decommissioned. We fully support decommissioning of roads, since as noted above many roads often cannot be properly maintained resulting in road sediment transport to streams. We note that reductions in road density, especially road stream crossing density, has often been correlated with improved aquatic health.

   We also note that lower road densities are often associated with improved wildlife habitat, connectivity and security. In addition, there is often a relationship between higher road density and increased forest use and increased human caused fire occurrences. Reduction in road density, therefore, may also reduce risks of human caused fires, which could be important in an area with high fuels/fire risk and/or wildland/urban interface issues.

   Are there any opportunities to decommission additional roads in the Flint Foothills project area, particularly roads near streams with problem areas that are difficult to maintain? We encourage closure and/or decommissioning of roads near streams with many stream crossings, since removal of these roads are more likely to have water quality benefits than closure and decommissioning of roads on upper slopes and ridges.

8. For your information our general recommendations regarding roads are as follows:

   * minimize road construction and reduce road density as much as possible to reduce potential adverse effects to watersheds;

   * locate roads in uplands, away from streams and riparian areas as much as possible;

   * minimize the number of road stream crossings;

   * locate roads away from steep slopes or erosive soils and areas of mass failure;

   * stabilize cut and fill slopes;

   * provide for adequate road drainage and control of surface erosion with measures such as adequate numbers of waterbars, maintaining crowns on roads, adequate numbers of rolling dips and ditch relief culverts to promote drainage off roads avoid drainage or along roads and avoid interception and routing sediment to streams;

   * consider road effects on stream structure and seasonal and spawning habitats;

* allow for adequate large woody debris recruitment to streams and riparian buffers near streams;

* properly size culverts to handle flood events, pass bedload and woody debris, and reduce potential for washout;

* replace undersized culverts and adjust culverts which are not properly aligned or which present fish passage problems and/or serve as barriers to fish migration;

* use bridges or open bottom culverts that simulate stream grade and substrate and that provide adequate capacity for flood flows, bedload and woody debris where needed to minimize adverse fisheries effects of road stream crossings.

Blading of unpaved roads in a manner that contributes to road erosion and sediment transport to streams and wetlands should be avoided. It is important that road grading focus on reducing road surface erosion and sediment delivery from roads to area streams. Practices of expediently sidecasting graded material over the shoulder and widening shoulders and snow plowing can have adverse effects upon streams, wetlands, and riparian areas that are adjacent to roads. These practices should be avoided.

Roads are particularly vulnerable to damage during spring breakup as overly-saturated roadbeds from winter freezing are working to dry out, and this typically occurs between March 30 and June 30, but can vary depending on the severity of the winter and spring weather conditions. We encourage avoiding road use during spring breakup conditions, and closing roads to log haul during spring break up to reduce rutting of roads that increase road erosion and sediment delivery, and graveling of haul roads. Snow plowing of roads later in winter for log haul should also be avoided to limit runoff created road ruts during late winter thaws that increase road erosion (i.e., ruts channel road runoff along roads increasing erosion and sediment transport).

We encourage routine conduct of inspections and evaluations to identify conditions on roads and other anthropogenic sediment sources that may cause or contribute to sediment to streams, and to include activities in the project to correct as many of these conditions and sources as possible. Forest Service Region 1 provides training for operators of road graders regarding conduct of road maintenance in a manner that protects streams and wetlands, (i.e., Gravel Roads Back to the Basics). If there are road maintenance needs on unpaved roads adjacent to streams and wetlands we encourage utilization of such training (contact Fred Bower FS R1 Transportation Management Engineer, at 406-329-3354).

We also note that there are training videos available from the Forest Service San Dimas Technology and Development Center for use by the Forest Service and its contractors (e.g., "Forest Roads and the Environment"-an overview of how maintenance can affect watershed condition and fish habitat; "Reading the Traveled Way" -how road conditions create problems and how to identify effective treatments; "Reading Beyond the Traveled Way"-explains considerations of roads vs. natural

landscape functions and how to design maintenance to minimize road impacts; "Smoothing and Reshaping the Traveled Way"-step by step process for smoothing and reshaping a road while maintaining crowns and other road slopes; and "Maintaining the Ditch and Surface Cross Drains"-instructions for constructing and maintaining ditches, culverts and surface cross drains).

9. We are pleased that the project design features and mitigation measures include many measures to avoid and minimize impacts to aquatic resources (pages 55-57), and specify the need to obtain necessary permits for activities that would disturb streams and wetlands (e.g., 404 permits, Montana Streamside Protection Act (SPA) 124 permits). We encourage the BDNF to contact Mr. Todd Tillinger of the U.S. Army Corps of Engineers, Montana Office in Helena at 406-441-1375 to determine applicability of 404 permit requirements to proposed construction activities in or near streams or wetlands.

   We note that if a 404 permit(s) is eventually required to implement aspects of the proposed project that involve disturbances to streams and wetlands there would also be a need to obtain appropriate water quality standards certification from the Montana DEQ in accordance with Section 401 of the Clean Water Act. We encourage contact with Mr. Jeff Ryan of the Montana DEQ at 406-444-4626 in regard to 401 certification. A short term turbidity exemption is generally also required from the State when operating heavy equipment in waters of the State (e.g., 318 authorization). To ease the administrative burden the Federal and State agencies have developed a single permit application for the various potential permits or authorizations that may be needed (http://dnrc.mt.gov/permits/default.asp , http://dnrc.mt.gov/permits/streampermitting/joint_application.asp). Also a Montana Stream Permitting Guide is available to explain the various permitting authorities http://dnrc.mt.gov/permits/streampermitting/guide.asp.

Wetlands and Riparian Areas

10. EPA considers the protection, improvement, and restoration of wetlands and riparian areas to be a high priority. Wetlands and riparian areas increase landscape and species diversity, and are critical to the protection of designated water uses. Executive Order 11990 requires that all Federal Agencies protect wetlands. It is important that wetlands and riparian areas be properly managed to maintain and restore the health of watersheds and aquatic resources to sustain aquatic and terrestrial species and provide water of sufficient quality and quantity to support beneficial uses. Adequate riparian vegetation in stream-side areas must be maintained to stabilize streambanks and stream channels during floods and other periodic high flow events.

    The DEIS states that no wetlands or springs were observed within proposed project units, although it also states that springs and seeps were observed throughout the project area (page 280). It appears unlikely that there would be no wetlands within harvest units. We recommend that all harvest units be reviewed in the field to determine the presence of wetlands, and that if wetlands are found that they be identified on the Sale Area Map and flagged on the ground to better assure that timber contractors will be able to avoid them.

11. We are pleased that Inland Native Fish (INFISH) Riparian Conservation Area (RCA) buffers would be used in the proposed project (i.e., 300 feet buffers from perennial streams and 50 feet from intermittent streams), to reduce the risk of sediment delivery to streams, provide a source of large woody debris for channels, and help maintain cooler stream temperatures. RCAs are an important management element in the Interior Columbia Basin (ICB) Strategy to maintain and restore the health of watersheds, riparian, and aquatic resources to sustain aquatic and terrestrial species and provide water of sufficient quality and quantity to support beneficial uses (see http://www.icbemp.gov/html/icbstrat.pdf ; and "A Framework for Incorporating the Aquatic and Riparian Habitat Component of the Interior Columbia Basin Strategy into BLM and Forest Service Plan Revisions," http://www.icbemp.gov/html/aqripfrm7804.pdf . It is important that proposed federal land management activities in the ICB are consistent with the riparian management objectives described in the ICB Strategy, which include:

    * Achieve physical integrity of aquatic ecosystems;
    * Provide an amount and distribution of woody debris sufficient to sustain physical and biological complexity;
    * Provide adequate summer and winter thermal regulation;
    * Provide appropriate amounts and distributions of source habitats for riparian- or wetland-dependent species; and
    * Restore or maintain water quality and hydrologic processes.
    * Restore or maintain naturally functioning riparian vegetation communities.

Soils

12. The Table 68 soil risk ratings (pages 246-249) show high erosion risk ratings for a number of treatment units, although no high risks are shown for rutting, compaction, or mass movements. We generally recommend avoidance of tractor timber harvest and road construction in areas with high risk of erosion potential.

    Table 71 (pages 257-259) showing detrimental soil disturbance by harvest unit for Alternative 2 identifies units 32ST, 40S, 41S right at the 15 percent Regional standard for detrimental soil disturbance, and unit 56C is at 14.1 percent detrimental soil disturbance. It is stated (page 259) that subsoiling would occur on units 32ST, 40S, 41S to ensure compliance with the soil quality standards [32ST (18.6% DSD), 40S (16.7 percent DSD), and 41S (20.7 percent DSD)]. Subsoiling is also proposed on unit 23C in Alternative 3. It is our understanding that subsoiling is similar to tilling, but we did not see a description of subsoiling in the DEIS. It would be helpful to describe subsoiling, since it appears that this measure will be needed on units 32ST, 40S, 41S and perhaps 56C to avoid exceedance of Regional soil quality standards.

13. We appreciate the many project design features and mitigation measures proposed to protect soils (e.g., limiting ground-based yarding to slopes below 35 percent and using cable logging on steeper slopes; harvesting on only dry or frozen soils; 75-100 feet distances between skid trails and placing slash on skid

trails; scarifying compacted soils prior to seeding on landings, etc.). We are particularly pleased that coarse woody debris would be retained in harvest units to maintain long-term soil productivity and wildlife habitat (i.e., 7-12 tons per acre of coarse woody debris over 3 inches in diameter). It is important that adequate amounts of woody debris be retained on-site following vegetative treatments to maintain soil productivity.

We fully support such practices. We often suggest mitigation measures such as use of existing skid trails wherever possible; restrictions on skidding with tracked machinery in sensitive areas; using slash mats to protect soils; constructing water bars; creating brush sediment traps; adding slash to skid trail surfaces after recontouring and ripping; seeding/planting of forbs, grasses or shrubs to reduce soil erosion and hasten recovery; as well as recontouring, slashing and seeding of temporary roads and log landing areas following use to reduce erosion and adverse impacts to soils.

14. The Forest Soil Disturbance Monitoring Protocol (FSDMP) is mentioned in regard to estimating potential soil disturbance (page 251), and post-harvest soil monitoring within 3 years of project conclusion mentioned (page 252). We are pleased that it is stated that all units would meet soil quality standards and soil monitoring would occur to ensure compliance with soil quality standards (page 263).

Monitoring

15. We consider monitoring to be an integral part of land management. The EPA endorses the concept of adaptive management whereby effects of implementation activities are determined through monitoring (i.e., ecological and environmental effects). It is through the iterative process of setting goals and objectives, planning and carrying out projects, monitoring impacts of projects, and feeding back monitoring results to managers so they can make needed adjustments, that adaptive management works. In situations where impacts are uncertain, monitoring programs allow identification of actual impacts, so that adverse impacts may be identified and appropriately mitigated. Monitoring also allows verification and documentation of environmental effects predicted during NEPA evaluation.

EPA particularly believes that water quality/aquatics monitoring is a necessary and crucial element in identifying and understanding the consequences of one's actions, and for determining effectiveness in BMPs in protecting water quality. The achievement of water quality standards for non-point source activities occurs through the implementation of BMPs. Although BMPs are designed to protect water quality, they need to be monitored to verify their effectiveness. If found ineffective, BMPs need to be revised, and impacts mitigated. We encourage adequate monitoring budgets for conduct of aquatic monitoring to document BMP effectiveness and long-term water quality improvements associated with road BMP work and road decommissioning.

We did not see much discussion of water quality or aquatics monitoring in the DEIS. It is stated that monitoring takes place to test whether BMPs are protecting beneficial uses (page 273), and monitoring involving measurement of changes in abundance of the mayfly *Drunella doddsi* (DD) over time is used as an indication of changing sediment levels (page 316). However little detail

regarding this aquatic biological monitoring for the proposed project is provided (e.g., where and when such biological DD monitoring occurs). We did not see much specific discussion regarding project aquatics monitoring to determine that the BMPs are effective as implemented to meet State water quality standards, or to validate DEIS predictions of minimal water quality impacts.

We recognize that there are limited resources for monitoring, and that the Flint Foothills Vegetation Management project is likely to have minimal water quality impacts if the project is carried out as designed and all appropriate BMPs are applied, particularly if Alternative 3 is selected that does not include construction of new roads. However, we encourage conduct of some aquatic monitoring to document and measure water quality impacts of the activities that are implemented. We encourage adequate monitoring budgets for conduct of monitoring to document BMP effectiveness and effects of road construction and timber harvests.

We generally recommend that some aquatic monitoring be included in projects, using aquatic monitoring parameters such as channel cross-sections, bank stability, width/depth ratios, riffle stability index, pools, large woody debris, fine sediment, pebble counts, macroinvertebrates, etc.. Biological monitoring can be particularly helpful, since monitoring of the aquatic biological community integrates the effects of pollutant stressors over time and, thus, provides a more holistic measure of impacts than grab samples.

We note that there may be PACFISH/INFISH Biological Opinion (PIBO) monitoring sites in the project area that could be used to help evaluate actual project effects (http://www.fs.fed.us/biology/fishecology/emp/index.html). If there are PIBO monitoring sites in the area, perhaps they may be considered for their potential to evaluate project effects.

Air Quality

16. The Flint Foothills Vegetation Management Project action alternatives include prescribed burning on 1,990 acres in 8 units ranging from 15 to 710 acres (Table S-6, page S-9). Table S-8 states that fire would be used on 1,259 acres of mid to high elevation lodgepole pine stands and 731 acres of low elevation ponderosa pine and Douglas fir stands (page S-13), and may occur in spring or fall over multiple years (page 14). The DEIS also states that unmerchantable material brought to landings would be piled for chipping or burning, and burning would occur when weather and ground conditions are suitable to maintain air quality and the burning can be controlled (page S-5).

The EPA supports judicious and well planned use of prescribed fire to reduce hazardous fuels and restore fire to forest ecosystems, and we recognize and support the national goal reduce the risk of uncontrolled wildfire in wildland-urban interface areas. Although as is well known, smoke from fire contains air pollutants, including tiny particulates (PM_{10} and $PM_{2.5}$) which can cause health problems, especially for people suffering from respiratory illnesses such as asthma or emphysema, or heart problems. PM_{10} and $PM_{2.5}$ particles are both of concern, although $PM_{2.5}$ is greater concern because it can penetrate into the lungs whereas larger particles (included in the coarse fraction of PM_{10}) deposit in the upper respiratory tract. Particulate concentrations that exceed health standards

have been measured downwind from prescribed burns.

In addition to health-based standards to protect ambient air quality, the Clean Air Act requires special protection of visibility in the nation's large National Parks and Wilderness Areas (identified as mandatory Class I Federal areas) and establishes a national goal for "the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I federal areas which impairment results from man-made air pollution." EPA's Clean Air Act implementing regulations require states to submit State Implementation Plans that, among other things, demonstrate attainment of the National Ambient Air Quality Standards (NAAQS), as well as reasonable progress toward the national visibility goal. Actions by Federal Land Managers that lack adequate mitigation of air quality impacts could impede a state's ability to meet Clean Air Act requirements. It is important that Project activities, when combined with air quality impacts from external sources, do not adversely impact the NAAQS or air quality related values (AQRVs) such as visibility.

The Flint Foothills project area is located on the northern edge of Montana Airshed 5 (Upper Clark Fork) and adjacent to the southern edge of Montana Airshed 3B (page 110). Three Class I air quality areas are identified within approximately 62 miles of the project boundaries (Table 36), including the Anaconda-Pintler Wilderness (27 miles to the south); Gates of the Mountains Wilderness (35 miles to the northeast); and the Scapegoat Wilderness (41 miles north). The area surrounding the city of Butte is stated to be the only air quality non-attainment area for particulates (PM_{10}) within 100 kilometers of the project area (located approximately 28 miles southeast from the southern-most boundary of the Flint Foothills project area, page 108). We generally recommend that the EIS include a map showing the relative locations of Class I areas and any PM_{10} and $PM_{2.5}$ non-attainment areas that may be affected relative to areas of prescribed burns to improve public understanding of the proximity of sensitive areas to proposed burning activities.

We are pleased that the DEIS states that all prescribed burning would comply with the requirements of the State Implementation Plan and the Smoke Management Plan (page 50), and that burning is reported to the Airshed Coordinator on a daily basis. The DEIS also states that a prescribed burn plan would be completed prior to any burning to address mitigation measures to minimize smoke impacts and comply with State and Federal air quality regulations; and if ventilation problems are forecast by the monitoring unit, prescribed burning will be restricted by elevation or curtailed until good ventilation exists. In addition it states that Best Available Control Technologies (BACT) would be implemented during prescribed burning operations to limit emissions to the maximum degree that MDEQ determines for that source on a case-by-case basis. Techniques and methods include: scheduling burn periods, applying dispersion forecasts, fuel preparation and configuration, and limiting the amount of burning, ignition and burning techniques that minimize smoke production. We suggest that the website for the Montana/Idaho State Airshed Group, http://www.smokemu.org/ be displayed in the EIS, since it may be of interest to the public.

The DEIS acknowledges that prescribed fire can affect air quality at the time of the burning, but states that effects are expected to be minimal and of short duration (page 375). It also states that smoke from prescribed fires is unlikely to impact the Butte PM_{10} non-attainment area because the

Montana/Idaho Airshed Group would restrict burning during periods when dispersion would transport smoke toward this area, and all prescribed burning activity would be coordinated and conducted through the Montana/Idaho Airshed Group smoke management program to ensure that impacts to air quality would be minimized. The DEIS states that all alternatives would be consistent with clean air regulations, laws, policies, and programs (page 111).

While we appreciate the information provided regarding potential air quality impacts of prescribed burning, we often recommend additional disclosures. We recommend that a list of the current NAAQS be provided, and that pollutant emissions (i.e., particulates) should be quantified as much as possible for any prescribed burning and for construction, traffic, and wind erosion on new and existing roads for activities associated with this project (e.g., see pages 25 and 26 of the 2010 Montana/Idaho Airshed guide found at, http://www.smokemu.org/docs/20100601OpsGuide.pdf). Air pollutants that are projected to be emitted in substantial amounts should have further mitigation applied (i.e. fugitive dust control requirements/road surfacing requirements, use of combustion technology such as air curtain destructors, etc.).

We also recommend that the FEIS include: (1) discussion of appropriate smoke monitoring techniques and mitigation to minimize effects to nearby residents downwind of prescribed burns (including meteorological conditions favorable for mitigated prescribed fire smoke and alternatives to prescribed fire such as mechanical fuel reduction methods); (2) requirements for the incorporation of the Interagency Prescribed Fire Planning and Implementation Procedures Guide (July 2008, http://www.nwcg.gov/pms/RxFire/rxfireguide.pdf) into the site-specific burn plans designed for each prescribed burn conducted under this project; and (3) commitment to public notification of pending burns. It is important that residents downwind of burn areas be notified prior to the proposed prescribed burning, since even though burns will be scheduled during periods of favorable meteorological conditions for smoke dispersal, the weather can change causing smoke not to disperse as intended. This can be especially problematic for smoldering pile burns when a period of poor ventilation follows a good ventilation day.

Climate Change

17. We appreciate the DEIS discussion regarding climate change, forest carbon cycling and storage, and climate change effects on vegetation and wildlife (pages 73, 104, 157). We encourage such discussion in NEPA documents since it contributes to improved public understanding of the effects of climate change on forest ecosystems and forest management, particularly the effects of hotter and drier conditions in stressing trees, increasing the frequency of bark beetle outbreaks, and allowing bark beetles to move northward or higher in elevation and into other ranges of their hosts or the ranges of new potential hosts. Climate change research indicates that earth's climate is changing, and that the changes will accelerate, and that human greenhouse gas (GHG) emissions, primarily carbon dioxide emissions (CO2), are the main source of accelerated climate change (United Nations Intergovernmental Panel on Climate Change (IPCC) , http://www.ipcc.ch/).

Forest Service guidance on how to consider climate change in project-level NEPA documents can be found at, http://www.fs.fed.us/emc/nepa/climate_change/includes/cc_nepa_guidance.pdf, and suggests EIS analysis and disclosure of the following:

- **The effect of a proposed project on climate change.** (GHG emissions and carbon cycling). Examples include: short-term GHG emissions and alteration to the carbon cycle caused by hazardous fuels reduction projects, and avoiding large GHG emissions pulses and effects to the carbon cycle by thinning overstocked stands to increase forest resilience and decrease the potential for large scale wildfire.

- **The effect of climate change on a proposed project**. Examples include: effects of expected shifts in rainfall and temperature patterns on the seed stock selection for reforestation after timber harvest and effects of changed stream hydrographs due to earlier snowmelts.

Climate change appears to be a factor influencing some bark beetle outbreaks. Temperature influences everything in a bark beetle's life, from the number of eggs laid by a single female beetle, to the beetles' ability to disperse to new host trees, to individuals' over-winter survival and developmental timing. Elevated temperatures associated with climate change, particularly when there are consecutive warm years, can speed up reproductive cycles and reduce cold-induced mortality. Shifts in precipitation patterns and associated drought can also influence bark beetle outbreak dynamics by weakening trees and making them more susceptible to bark beetle attacks, (http://www.fs.fed.us/ccrc/topics/bark-beetles.shtml). Climate change may increase stress to ponderosa pine seedlings, and affect the ability of ponderosa pine and other species to prosper through time, and may have added to stress factors leading or affecting the current bark beetle attacks.

We agree with the DEIS statement that despite the uncertainty of future climate conditions at local scales, the majority of published science suggests that climate changes may strongly influence the frequency, intensity, and size of disturbances (such as fire and extensive insect outbreaks) in coming decades on areas of the BDNF (page 73). Wildland fire frequency has increased in the west and altered fire regimes over the last twenty years due to climate change. More frequent fires are currently burning for extended periods of time (average of 5 weeks) compared to the infrequent fires lasting less than one week that were common prior to the mid-1980s. Large wildfire activity increased in the 1980s, with higher large fire frequency, longer wildfire durations, and longer wildfire seasons; with the greatest increases occurring in mid-elevation.

EPA Region 8 suggests a general four step approach to address climate change in NEPA documents that appears consistent with the Forest Service guidance.

- Briefly discuss the link between greenhouse gases (GHGs) and climate change, and the potential impacts of climate change, (see http://www.epa.gov/climatechange/ , http://www.fs.fed.us/ccrc/ , http://www.ipcc.ch/).

- Describe the capacity of the proposed action to adapt to projected climate change effects, including consideration of future needs.
- Characterize, quantify and disclose the expected annual cumulative emissions of GHGs attributable to the project, using annual CO2-equivalent as a metric for comparing the different types of GHGs emitted. It is suggested that the project's emissions be described in the context of total GHG emissions at regional, national and global scales (over the lifetime of the project).
- Discuss potential means to mitigate project-related emissions as appropriate pursuant to CEQ regulations (40 CFR Sections 1502.14(f), 1502.16(h), 1508.14).

Forest Vegetation

18. The DEIS Chapter 3 discussion of forest vegetation provides helpful information regarding project effects on forest structure and composition, disturbance, insects and pathogens, fire regimes, fuels and fire risks. EPA supports vegetative treatments to reduce fire risks, susceptibility to insect and disease agents, improving forest structural diversity and ecological integrity. We also support the need to restore fire as a natural disturbance process, and to help address competing and unwanted vegetation and fuel loads and fire risk and forest health.

    We generally favor understory thinning from below, slashing and prescribed fire to address fuels build-up with reduced ecological impacts. We also favor retention of the larger more vigorous trees, particularly trees of desirable tree species whose overall composition may be in decline (e.g., Ponderosa pine, aspen, whitebark pine). The larger trees are generally long-lived and fire resistant, and provide important wildlife habitat. Harvest of many live mature trees could potentially increase fire risk, as well as reduce wildlife habitat. If the forest canopy is opened too much by removal of large fire resistant trees it may promote more vigorous growth of underbrush and small diameter trees that would increase fuels and fire risk in subsequent years, contrary to the fire risk reduction purpose and need.

    We are pleased that the project design features and mitigation measures indicate that the best trees (free growing and full crowned) would be retained with priority for retention given to species other than lodgepole pine; and all trees (live or dead) greater than 20 inches d.b.h. and all whitebark pine (regardless of size) would be retained.

19. EPA also supports protection of old growth habitats and maintenance or restoration of native, late-seral overstory trees and forest composition and structure within ranges of historic natural variability. Old growth stands are ecologically diverse and provide good breeding and feeding habitat for many bird and animal species, which have a preference or dependence on old growth (e.g., barred owl, great gray owl, pileated woodpecker). Much old growth habitat has already been lost, and it is important to prevent continued loss of old growth habitat and promote long-term sustainability of old growth stands, and restore where possible the geographic extent and connectivity of old growth (e.g., using passive and active management-such as avoiding harvest of old growth trees, leaving healthy larger and older seral species trees, thinning and underburning to

reduce fuel loads and ladder fuels in old growth while enhancing old growth characteristics). Often lands outside the forest boundary have not been managed for the late-seral or old growth component, so National Forest lands may need to contribute more to the late-seral component to compensate for the loss of this component on other land ownerships within an ecoregion.

Table 28 (page 80) indicates that there are 281 acres of inventoried old growth in the project area (not reflecting total old growth in the project area), with old growth present in units 6C, 23C, 25C, and 55C. No proposed salvage by clearcut activities in old-growth or potential old-growth stands would occur (page 101), but commercial thinning is proposed in 121 acres of old growth in Alternative 2. Commercial thinning in old growth is dropped in Alternative 3. Although the DEIS states that both action alternatives would retain all of the existing old-growth acres within the project area (page S-11), but it would be multi-storied old growth with Alternative 3 and single-storied old growth with Alternative 2.

Generally EPA does not object to treatments in old growth that are intended to protect old growth characteristics, such as thinning of understory or under burning to reduce fuel loads and ladder fuels in old growth. Such treatments may lessen the threat of stand removal by a wildfire and reduce competition with other vegetation to promote more resilient, larger diameter trees. Careful prescribed burning in old growth stands can reduce fuel loads and fire risk in such stands, and thus, may promote long-term protection and sustainability of old growth stands. Although we have some concern that commercial thinning in old growth may result in removal of large old trees likely to become future old growth. We encourage non-commercial thinning to minimize such effects.

Noxious Weeds

20. Weeds are a great threat to biodiversity and can often out-compete native plants and produce a monoculture that has little or no plant species diversity or benefit to wildlife. Noxious weeds tend to gain a foothold where there is disturbance in the ecosystem, such as road building, logging, livestock grazing or fire activities. We are pleased that the BDNF has a program to control noxious weeds (BDNF Noxious Weed Control Program Record of Decision). EPA supports integrated weed management, and we encourage use of weed control measures at the earliest stage of invasion to reduce impacts to native plant communities. Weed prevention is the most cost-effective way to manage and control weeds by avoiding new infestations and spread of weeds, and thus, avoiding the need for subsequent weed treatments. We encourage tracking of weed infestations, control actions, and effectiveness of control actions in a Forest-level weed database.

We are pleased that the proposed Flint Foothills Vegetation Management DEIS project includes measures to control and manage spread of weeds (page 52), and the DEIS includes a section addressing invasive plants and noxious weeds (page 135 -148). Although it is also important to recognize that herbicide use for weed control has the potential to cause adverse effects to water quality and fisheries. Herbicide drift into streams and wetlands could adversely affect aquatic life and wetland functions such as food chain support and habitat for wetland species. Montana's Water Quality Standards include a general narrative standard requiring surface waters to *be free from*

substances that create concentrations which are toxic or harmful to aquatic life. We recommend that herbicide weed treatments be coordinated with the Forest botanist to assure protection to sensitive plants, and coordinated with fisheries biologists and wildlife biologists to assure that sensitive fisheries and wildlife habitat areas are protected.

Some suggestions to reduce potential water quality and fisheries effects from herbicide spraying that we didn't see listed among these weed management measures are: 1) streams and wetlands in any area to be sprayed be identified and flagged on the ground to assure that herbicide applicators are aware of the location of wetlands, and thus, can avoid spraying in or near wetlands; 2) use treatment methods that target individual noxious weed plants in riparian and wetland areas (depending on the targeted weed species, manual control or hand pulling may be one of the best options for weed control within riparian/wetland areas or close to water). We also recommend that use of picloram based herbicides (e.g., tordon) be avoided near aquatic areas, and that potentially toxic herbicides be applied at the lowest rate effective in meeting weed control objectives and according to guidelines for protecting public health and the environment.

Please also note that there may be additional pesticide use limitations that set forth geographically specific requirements for the protection of endangered or threatened species and their designated critical habitat. This information can be found at http://www.epa.gov/espp/bulletins.htm. You may also want to consider use of a more selective herbicide (clopyralid) in conifer associated communities to reduce impacts on non-target vegetation. We also note that spotted knapweed, which is a prevalent noxious weed species in western Montana, is non-rhizomatous and should be relatively easy to control with lower rates of the most selective low toxicity herbicides.

For your information, the website for EPA information regarding pesticides and herbicides is http://www.epa.gov/pesticides/ . The National Pesticide Telecommunication Network (NPTN) website at http://nptn.orst.edu/tech.htm which operates under a cooperative agreement with EPA and Oregon State University and has a wealth of information on toxicity, mobility, environmental fate on pesticides that may be helpful (phone number 800-858-7378).

21. Weed seeds are often transported by wind and water, animal fur, feathers and feces, but primarily by people. The greatest vector for spread of weeds is through motorized vehicles-cars, trucks, ATVs, motorcycles, and even snowmobiles. Weed seeds are often caught on the vehicle undercarriage in mud and released on the Forest. A single vehicle driven several feet through a knapweed site can acquire up to 2,000 seeds, 200 of which may still be attached after 10 miles of driving (Montana Knapweeds: Identification, Biology and Management, MSU Extension Service).

We believe an effective noxious weed control program should consider restrictions on motorized uses, particularly off-road uses, where necessary. Off-road vehicles travel off-trail, disturbing soil, creating weed seedbeds, and dispersing seeds widely. Restrictions on motorized uses may also be needed after burning and harvest activities until native vegetation is reestablished in the disturbed areas to reduce potential for weed infestation of the disturbed sites. Weed seed dispersal from non-motorized travel is of lesser concern because of fewer places to collect/transport seed, and the

dispersal rate and distances along trails are less with non-motorized travel.

We appreciate the DEIS discussion of the potential for motorized travel to carry seeds and spread invasive plants, and Forest Service efforts to expend money and time educating the public on the importance of not spreading invasive plant species and proper weed prevention practices (page 147). We are pleased that the DEIS states that there is low potential for continued use of open, motorized roads by the public to result in measureable invasive plant species spread into uninfested lands within the project area because of existing levels of invasive plant species infestation, ongoing treatment efforts, and the effectiveness of past invasive plant species control efforts.

Wildlife/T&E Species

22. The DEIS indicates that some threatened and/or endangered (T&E) species may occur in the project areas such as the grizzly bear and Canada lynx. The DEIS indicates that grizzly bear observations have not been reported within the project area (page 176), but grizzly bears have been documented in areas in close proximity to the Flint Foothills Project area (page 166), and recent increases in grizzly bear sightings on and near the northern portion of the BDNF may indicate a higher potential for grizzly bear occurrence in the future. The DEIS reports that effects to grizzly bears and their habitats may occur as a result of temporary increase in road densities, temporary reduction in security summer security area, project-related disturbance, and vegetation modification. We are pleased that the BDNF will consult with the U.S. Fish and Wildlife Service (USFWS) concerning the effects of proposed Flint Foothills project activities on grizzly bears (page 176).

The DEIS reports that the BDNF is considered unoccupied habitat for the threatened Canada lynx (page 229), and that while it stated that the project may affect lynx habitat, effects on lynx and their habitat are expected to be minor, with impacts within the thresholds identified in the Northern Rockies Lynx Management Direction (page 237).

If it is found that the finally selected project alternative may adversely affect any T&E species the final EIS should include the associated USFWS Biological Opinion or formal concurrence for the following reasons:

(a) NEPA requires public involvement and full disclosure of all issues upon which a decision is to be made;

(b) The CEQ Regulations for Implementing the Procedural Provisions of NEPA strongly encourage the integration of NEPA requirements with other environmental review and consultation requirements so that all such procedures run concurrently rather than consecutively (40 CFR 1500.2(c) and 1502.25); and

(c) The Endangered Species Act (ESA) consultation process can result in the identification of reasonable and prudent alternatives to preclude jeopardy, and mandated reasonable and prudent measures to reduce incidental take. These can affect project implementation.

Since the Biological Assessment and EIS must evaluate the potential impacts on listed species, they can jointly assist in analyzing the effectiveness of alternatives and mitigation measures. If T&E species are subsequently identified in the project area, EPA recommends that the final EIS and Record of Decision not be completed prior to the completion of ESA consultation. If the consultation process is treated as a separate process, the Agencies risk USFWS identification of additional significant impacts, new mitigation measures, or changes to the preferred alternative.

23. The DEIS includes helpful discussion regarding availability of snags for cavity nesting species such as black-backed woodpeckers and flammulated owls (pages 162-163). Table 46 (page 162) identifies the minimum number of snags to be retained per acre in various vegetative habitats, and Table 17 (page 52) discloses Forest Plan snag retention standards. The DEIS indicates that proposed treatments would remove up to approximately 7 percent of existing foraging habitat for the black-backed woodpecker, but at least 90 percent of the stands would continue to provide potential foraging and nesting habitat, as long as mountain pine beetles and secondary beetles are present (page 184).

    We are pleased that the DEIS identifies mitigation measures for wildlife including cavity nesting species (pages 52-54), and states that both action alternatives would maintain habitat for cavity nesting species across the project area (page 163). It is stated that while project implementation may impact individual black-backed woodpeckers and flammulated owls or their habitat it will not likely result in a trend toward federal listing or reduced viability of the population or species (pages 184, 189).

24. Biodiversity may be an important consideration for new projects or when special habitats (i.e., wetlands, threatened and endangered species habitat) will be affected. The state of the art for this issue is changing rapidly. We recommend that potential project impacts on biodiversity be at least briefly evaluated and discussed in the NEPA document. CEQ prepared guidance entitled, "Incorporating Biodiversity Considerations Into Environmental Impact Analysis Under the National Environmental Policy Act," http://ceq.hss.doe.gov/publications/incorporating_biodiversity.html.

Roadless

25. The DEIS indicates that the 9,365-acre Dolus Lakes inventoried Roadless Area (IRA) overlaps the Flint Foothills project area, and 3,158 acres of the Dolus Lakes IRA are in the project area (page 365). Roadless areas often provide population strongholds and key refugia for listed or proposed species and narrow endemic populations due to their more natural undisturbed character. EPA supports protection of the pristine character and integrity of remaining minimally disturbed roadless areas to prevent further fragmentation and degradation of wildlife habitat, and to maintain or restore solitude and primitive recreation characteristics in such areas.

    The DEIS indicates that the Dolus Lakes IRA was not recommended for inclusion in the National Wilderness Preservation System in the recent BDNF Forest Plan Revision. The vast majority of the

IRA was assigned to the Flint Uplands management area (MA), which is managed for a mix of semi-primitive motorized and non-motorized recreation, as well as secure high-elevation wildlife habitat. Approximately 80 acres were assigned to the Flint Foothills MA and managed for timber production, livestock grazing and dispersed recreation.

Alternatives 2 and 3 both include 1,513 acres of vegetative treatments in the roadless area (395 acres clearcut salvage harvest; 42 acres commercial thinning; 366 acres of pre- commercial thinning; and 710 acres of prescribed burning, Table 95, page 372). Alternative 2 proposes 0.59 mile of new temporary road construction, and reconstruction of 0.39 mile of existing unauthorized routes in the roadless area to access the treatment units, while Alternative 3 only includes the reconstruction of 0.39 mile of existing unauthorized routes in the roadless area.

The DEIS states that none of the proposed vegetation treatments in the IRA would have long-term effects on the boundary of, size or shape of, or access to the Dolus roadless area or change any of the existing conditions regarding roadless area primeval and natural character. Access routes added (on the eastern edge of the roadless expanse) would be temporary. It concludes that while the project would have some short- and long-term effects on the wilderness attributes for the roadless area from clearcut salvage treatments and prescribed burning, there would be no irreversible and irretrievable commitment of potential wilderness attributes. It also states that there would be some beneficial effects from implementing Alternatives 2 or 3, such as increased forest resiliency in the vegetative communities treated.

While we are concerned about potential short-term effects to the Dolus IRA from proposed actions that could temporarily reduce the sense of solitude within some portions of the IRA due to noise associated with timber cutting and hauling operations, it does not appear that long-term adverse effects would occur. We do not object to treatments in the roadless area that would benefit the resiliency and long-term health of vegetative communities and reduce risk of catastrophic wildfire that could impact the roadless area to a greater degree than the proposed actions. Although we note that if the proposed vegetative treatments can be carried out without the construction of 0.59 miles of temporary road in the roadless area, as proposed in Alternative 3, we would support that proposal over the Alternative 2 proposal.

U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements

Definitions and Follow-Up Action*

Environmental Impact of the Action

LO - - Lack of Objections: The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC - - Environmental Concerns: The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO - - Environmental Objections: The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU - - Environmentally Unsatisfactory: The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 - - Adequate: EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 - - Insufficient Information: The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 - - Inadequate: EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.